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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,159	11/01/2005	Steffen Bjorn Petersen	09663.0061USWO	8924

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EXAMINER	
KIM, ALEXANDER D	

ART UNIT	PAPER NUMBER
1656	

MAIL DATE	DELIVERY MODE
02/07/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/542,159	PETERSEN ET AL.	
	Examiner	Art Unit	
	Alexander D. Kim	1656	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *31-50 and 88-92* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *31-50 and 88-92* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 July 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/01/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Application Status

1. The art unit location of your application and/or examiner has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group Art Unit 1656, Examiner Alexander Kim.

2. By virtue of a preliminary amendment filed on 10/31/2007, claims 1-30 and 51-87 have been canceled; claims 31-36, 39 and 42-44 have been amended; and new claims 89-92 have been added. Thus, claims 31-50 and 88-92 are pending in this instant case.

Election

3. Applicant's election of Group I, Claims 31-50 and 88-92, is acknowledged. Because applicant did not distinctly and specifically point out the status of traverse in the restriction requirement, the election has been treated as an election without traverse (M.P.E.P. § 818.03(a)). Applicants elected species (b) insoluble support and (23)gold.

Claims 31-50 and 88-92 will be examined herein.

Priority

4. The instant application is a 371 filing of the International Application No. PCT/DK04/00047 filed on 01/22/2004, which claims benefit of 60/441,975 filed on 01/22/2003. The Examiner notes that the requirements of national stage entry of the instant application had been completed (note assigned U.S. filing date) within 30

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months of the earliest claimed priority date; the related international application includes both a search report and a preliminary examination report.

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d) to a foreign patent application Denmark PA200300081 filed on 01/22/2003, which is in English.

Information Disclosure Statement

5. The information disclosure statement (IDS) filed on 11/01/2005 has been reviewed, and its references have been considered as shown by the Examiner's initials next to each citation on the attached copy.

Objections to the Specification

6. The specification is objected to because of the following informalities:

(a) The specification is objected to because the title is not descriptive of the claims. A new title is required that is clearly indicative of the invention to which the claims are drawn (see M.P.E.P. § 606.01). The examiner suggests the following new title, for example: ---Method of light induced immobilization---

Claim Objections

7. Claims 31-50 and 88-92 are objected to because of the following informalities:

(a) Claims 31-50 and 88-92 should be written in order, wherein the order has independent claim first in claims. Appropriate correction is required.

(b) Claims 40 and 42 disclose a symbol "Å". It should be --- Å---, and said abbreviation should be spelled out in the claim at the time of first appearance. Appropriate correction is required.

(c) Claim 46 recites "derivatised". It should be ---derivatized---. Appropriate correction is required.

(d) Claim 88 recites "whereon". The recitation of the ---wherein--- would be more clear. Appropriate correction is required.

(e) Claim 88 recites "a coupling" at the end of step b). It should be ---a coupling with the carrier---. Appropriate correction is required.

(f) Claim 88 recites "thiol group; or" at the end. It should be ---thiol group.---, with a period. All claims must have period at the end. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 36, 38, 41, 42 and 90 are rejected under of 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claims 36 and 38 recite "about 295nm, 275 nm or 254 nm" or "about 295nm". The word "about" as used in the claim as used to describe the wavelength of light is unclear as to the metes and bounds it imparts on the claimed subject matter. Specifically, it is unclear how varied the wavelength can be and still meets the limitation of the claim. Is 200nm encompassed by the recited limitation? Appropriate clarification is required.

(b) Claim 41 recites the limitation "the plane of the disulfide bridge". Unlike the Trp which is planer in structure and have one plane, for example; the disulfide bridge (such as S-S, for example) is formed by a single covalent bond (that is represented by "-") which is linear and have unlimited plane in or around that bridge; thus, reciting a one specific plane around the single covalent bond is unclear. Appropriate clarification is required.

(c) Claim 42 recites the limitation "over-represented" and "under-represented". It is unclear what is encompassed by the instant recitation. How can the "aromatic amino acid residues are over-represented or under-represented by a certain residues "by at least 1 fold"? Appropriate clarification is required.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. 31-50 and 88-92 are rejected under 35 U.S.C. § 112, first paragraph, written description, as containing subject matter which was not described in the specification in

such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The instant claim 88 is drawn to a method of coupling a disulfide bridge containing protein or peptide to a carrier comprising the following steps:

a) irradiating the protein or peptide to create a thiol group in the protein or peptide by disulfide bridge disruption; and b) incubating the irradiated protein or peptide with a carrier capable of binding a thiol group and thereby obtaining a coupling,

or

a) incubating the protein or peptide with a carrier capable of binding a thiol group; and b) irradiating the protein or peptide in the presence of said carrier to create a thiol group in the protein or peptide by disulfide bridge disruption and thereby obtaining a coupling,

wherein the carrier is an insoluble support whereon more than one disulfide-bridge- containing protein or peptide are coupled, each protein or peptide being coupled to said carrier through said created thiol group. Claims 31-50 and 89-92 are method of Claim 88 with an additional limitation(s) as disclosed in the claims.

The Court of Appeals for the Federal Circuit has recently held that a "written description of an invention involving a chemical genus, like a description of a chemical species, 'requires a precise definition, such as be structure, formula [or] chemical name,' of the claimed subject matter sufficient to distinguish it from other materials." University of California v. Eli Lilly and Co., 1997 U.S. App. LEXIS 18221, at *23, quoting

Fiers v. Revel, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993) (bracketed material in original). To fully describe a genus of genetic material, which is a chemical compound, applicants must (1) fully describe at least one species of the claimed genus sufficient to represent said genus whereby a skilled artisan, in view of the prior art, could predict the structure of other species encompassed by the claimed genus and (2) identify the common characteristics of the claimed molecules, e.g., structure, physical and/or chemical characteristics, functional characteristics when coupled with a known or disclosed correlation between function and structure, or a combination of these (paraphrased from Enzo Biochemical Inc. v. Gen-Probe Inc. (CAFC (2002) 63 USPQ2d 1609).

University of Rochester v. G.D. Searle & Co. (69 USPQ2d 1886 (2004)) specifically points to the applicability of both Lily and Enzo Biochemical to methods of using products, wherein said products lack adequate written description. While in University of Rochester v. G.D. Searle & Co. the methods were held to lack written description because not a single example of the product used in the claimed methods was described, the same analysis applies wherein the product, used in the claimed methods, must have adequate written description as noted from Enzo Biochemical (see above).

The instant specification teach a method of covalently attaching the cutinase isolated from *Fusarium solani pisi* to a carrier comprising: irradiating the protein with 296 nm which resulting in a free thiol group from the disufide bridge in the presence of tryptophan (Trp) which must reside in a spatial neighbor close enough to be quenched by the disulfide bond (wherein the spatial arrangement is described as a "Trp/Cys-Cys

triad" in the instant application, for example); wherein the Trp is excited by 296 nm, wherein quenching breaks disulfide bond and forming free thol that can be covalently attach to the insoluble support having the functional group forming a covalent bond with free thiol of the protein or peptide.

However, the breadth of claims 31-50 and 88-92 includes a method comprising irradiating at any wave length to any protein or any peptide to create a thiol group in the protein or peptide by disulfide bridge disruption; and incubating the irradiated protein or peptide with a carrier encompassing genus material by broad and reasonable interpretation of "a carrier capable of binding a thiol group" (emphasis added), wherein recited "coupling" includes any kind of association or immobilization (as in Claim 44) and not limited to a coupling by covalent association between the protein or polypeptide with a carrier by disulfide bond (i.e., one of disulfide bridge). The method of Claim 88 also encompasses a process of forming any thiol from the disulfide bridge (that includes but not limited to disulfide covalent bond) in the protein or polypeptide in the presence of chemical (such as using DTT or any protein modifying agent which have disulfide bridge and binds to the protein to form a thiol group in the protein), which cause the reduction of disulfide bond, under any light, in view of open terminology of "comprising", and because of broad and reasonable interpretation of method steps of Claim 88(a) or (b) which does not limit the step to encompass the formation of any thiol group must be the results of irradiation. The prior art by Prombers et al. (FEBS Lett. 1999 Aug 13; volume 456(3): pages 409-416, as cited in the IDS) teaches one species encompassed within claimed genus method with broad and reasonable interpretation of the claims. The

specification discloses one example of method of coupling disufide bridge containing protein or peptide to an insoluble support as disclosed above. However, the method of instant specification and prior arts do not describe claimed genus method of coupling any protein or any polypeptide to an insoluble support by very widely varying genus method sufficiently to represent the correlation between the structure of genus described by the breadth of claims above and function forming disulfide bridge between any protein or any polypeptide to any carrier. Furthermore, for the instant method described in the Examples (see page 23-43 of instant specification) to work, the protein or polypeptide have to have the Try and Cys-Cys disulfide bond (Try/Cys-Cys spatial arrangement) as shown in the cutinase isolated from *Fusarium solani pisi*, and it would be impossible to know in advance whether any protein or any polypeptide have the same the same Try Cys-Cys spatial arrangement as shown in the cutinase isolated from *Fusarium solani pisi*. Thus, the instant specification and the prior art do describe the structure of a very broad claimed genus and one skilled in the art would not be in possession of the full scope of claimed genus method by the instant disclosure.

2. Claims 31-50 and 88-92 are rejected under 35 U.S.C. 112, first paragraph, scope of enablement, because the specification, while being enabling for a method of covalently attaching the cutinase isolated from *Fusarium solani pisi* to a carrier comprising: irradiating the protein with 296 nm which resulting in a free thiol group from the disufide bridge in the presence of tryptophan (Trp) which must reside in a spatial neighbor close enough to be quenched by the disulfide bond (wherein the spatial

arrangement is described as a "Trp/Cys-Cys triad" in the instant application, for example); wherein the Trp is excited by 296 nm, wherein quenching breaks disulfide bond and forming free thiol that can be covalently attach to the insoluble support having the functional group forming a covalent bond with free thiol of the protein or peptide; **does not** reasonably provide enablement for a method comprising irradiating at any wave length to any protein or any peptide to create any thiol group in the protein or the peptide by disulfide bridge disruption; and incubating the irradiated protein or peptide with a carrier encompassing genus material, by broad and reasonable interpretation of "a carrier capable of binding a thiol group" (emphasis added), wherein recited "coupling" includes any kind of association or immobilization (as in Claim 44) and not limited to a coupling by covalent a carrier by disulfide bond (i.e., one of disulfide bridge). The method of Claim 88 also encompasses a process of forming any thiol from the disulfide bridge (that includes but not limited to disulfide covalent bond) in the protein or polypeptide in the presence of chemical (such as using DTT or any protein modifying agent which have disulfide bridge and binds to the protein to form a thiol group in the protein), which cause the reduction of disulfide bond, under any light, in view of open terminology of "comprising", and because of broad and reasonable interpretation of method steps of Claim 88(a) or (b) which does not limit the step to encompass the formation of any thiol group must be the results of irradiation.

The specification does not enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and use of the invention commensurate in scope with these claims.

The factors to be considered in determining whether undue experimentation is required are summarized In re Wands 858 F.2d 731, 8 USPQ2nd 1400 (Fed. Cir, 1988). The Court in Wands states: "Enablement is not precluded by the necessity for some experimentation such as routine screening. However, experimentation needed to practice the invention must not be undue experimentation. The key word is 'undue,' not 'experimentation.' " (Wands, 8 USPQ2d 1404). Clearly, enablement of a claimed invention cannot be predicated on the basis of quantity of experimentation required to make or use the invention. "Whether undue experimentation is needed is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations." (Wands, 8 USPQ2d 1404). The factors to be considered in determining whether undue experimentation is required include: (1) the quantity of experimentation necessary, (2) the amount or direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims. While all of these factors are considered, a sufficient amount for a prima facie case are discussed below.

The nature of the invention is drawn to a method of covalently attaching the cutinase isolated from *Fusarium solani pisi* to a carrier comprising: irradiating the protein with 296 nm which resulting in a free thiol group from the disufide bridge in the presence of tryptophan (Trp) which must reside in a spatial neighbor close enough to be quenched by the disulfide bond (wherein the spatial arrangement is described as a "Trp/Cys-Cys triad" in the instant application, for example); wherein the Trp is excited by

296 nm, wherein quenching breaks disulfide bond and forming free thiol that can be covalently attach to the insoluble support having the functional group forming a covalent bond with free thiol of the protein or peptide. However, the breadth of claims 31-50 and 88-92 includes a method comprising irradiating at any wave length to any protein or any peptide to create a thiol group in the protein or peptide by disulfide bridge disruption; and incubating the irradiated protein or peptide with a carrier encompassing genus material by broad and reasonable interpretation of "a carrier capable of binding a thiol group" (emphasis added), wherein recited "coupling" includes any kind of association or immobilization (as in Claim 44) and not limited to a coupling by covalent association between the protein or polypeptide with a carrier by disulfide bond (i.e., one of disulfide bridge). The method of Claim 88 also encompasses a process of forming any thiol from the disulfide bridge (that includes but not limited to disulfide covalent bond) in the protein or polypeptide in the presence of chemical (such as using DTT or any protein modifying agent which have disulfide bridge and binds to the protein to form a thiol group in the protein), which cause the reduction of disulfide bond, under any light, in view of open terminology of "comprising", and because of broad and reasonable interpretation of method steps of Claim 88(a) or (b) which does not limit the step to encompass the formation of any thiol group must be the results of irradiation. Applicants teach a method of covalently forming a disulfide bond with a support having a thiol reactive functional group with certain proteins by irradiating 295 nm (i.e., the proteins used in the instant example cutinase, glucose oxidase, two Fab fragment, lysozyme, chimosin, wherein three-dimensional structure of all proteins were known,

although it is unclear which proteins were used in the Example except cutinase by the instant disclosure). The prior art by Prombers et al. (FEBS Lett. 1999 Aug 13; volume 456(3): pages 409-416, as cited in the IDS) teaches one species encompassed within claimed genus method with broad and reasonable interpretation of the claims. However, applicants disclose no direction or guidance on how to make and use any other method of coupling any disulfide bridge containing protein or peptide to any carrier comprising a step of irradiating and incubating the irradiated protein or polypeptide with any insoluble support. Furthermore, the disulfide bridge in a protein or polypeptide have to be on the surface of the protein or polypeptide and have tryptophan close by as shown in the structure of the cutinase (see Figure 2 of Prompers et al. (1999) as cited in the IDS). Thus, the specification and prior art fail to describe how to make and use the full scope of claimed genus method sufficiently. Therefore, it is unpredictable for the breadth of the scope (see above) to be used in the method of coupling any disulfide bridge containing protein or peptide to any carrier by photoinduction. It is also unpredictable for any protein or polypeptide encompassed by the claims for one skilled in the art to make and use the full scope of the method in claims because the protein has to have the Trp/Cys-Cys structure as shown in the cutinase (see Figure 2 of Prompers et al. (1999) as cited in the IDS), wherein the disulfide bond must be present on the surface for claimed method to work if a coupling is a thiol covalent binding to a support having thiol binding group. The said unpredictability makes the relative skill required in the art very high. For all of the above reason, it would require undue

experimentation necessary for genus method as encompassed by the breadth of claims as described above.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

19. Claims 31-49 and 88-92 are rejected under 35 U.S.C. 102(b) as being anticipated by Prombers et al. (FEBS Lett. 1999 Aug 13; volume 456(3): pages 409-416, as cited in the IDS).

The instant claim 88 is drawn to a method of coupling a disulfide bridge containing protein or peptide to a carrier comprising the following steps:

a) irradiating the protein or peptide to create a thiol group in the protein or peptide by disulfide bridge disruption; and b) incubating the irradiated protein or peptide with a carrier capable of binding a thiol group and thereby obtaining a coupling,

or

a) incubating the protein or peptide with a carrier capable of binding a thiol group; and b) irradiating the protein or peptide in the presence of said carrier to create a thiol group in the protein or peptide by disulfide bridge disruption and thereby obtaining a coupling,

wherein the carrier is an insoluble support whereon more than one disulfide-bridge- containing protein or peptide are coupled, each protein or peptide being coupled to said carrier through said created thiol group. Claims 31-49 and 89-92 are method of Claim 88 with an additional limitation(s) as disclosed in the claims.

Prombers et al. teach a method of irradiating cutinase from *Fusarium solani pisi* in a 3 mm quartz cuvette by spectrofluorometer at 295 nm (see top left column on page 410 in the Materials and methods), which resulted in a "tryptophan mediated photoreduction of disulfide bond" (as shown in the title and abstract) which meets the method of irradiating and incubating a protein. Because the recited limitation of "obtaining a coupling" between a protein and a carrier (that is an insoluble support) in the claim 88 is not limited to any type of association (or coupling), wherein said "coupling" includes but not limited to covalent, hydrophobic, affinity, hydrogen bonding, Van der Waals, hydrophilic binding or any other form of contact by a thiol group in the protein (for example), the cutinase of Prombers et al. placed inside the cuvette which makes contact with the cutinase (that is a carrier and insoluble support), meets the limitation of being coupled between the protein and a carrier (i.e., insoluble support). The coupling between the cutinase and an insoluble support (i.e., cuvette) is through the created thiol group of cutinase since the irradiation of 295 nm causes photoreduction of disulfide bond which is on the surface of the protein, and the thiol makes contact with a wall of cuvette (see Figure 2, page 414). Thus, the method step of Prombers et al. teach all limitation of Claims 88. There are many cutinase inside the cuvette; thus, the method of Prombers et al. meets the limitation of Claim 31 (i.e.,

comprising more than one disulfide bridge). The 295 nm irradiation step of Prombers et al. excites tryptophan, which meets the limitation of Claims 32-38. Prombers et al. also teach the same irradiation step comprising excitation slits set at 10 nm (see top left column, page 410), which meets the limitation of Claim 89-90. Any light contains more than one photon; thus, the method of Prombers et al. meets the limitation of Claim 35.

As described above, the Figure 2 on page 414 of Prombers et al. teach method step of (a) verifying a disulfide bridge; (b) identifying a Trp that is involved in transfer of "excited state electron transfer to the nearby cystine moiety, which is known to be a very strong quencher" (see top of left column, page 416). Finally, Prombers et al. teach (c) selecting wave length (i.e., 295nm), specifically exciting one or more of aromatic amino acid residues disrupting a disulfide bond. Thus, the method of Prombers et al. meets the limitation of Claim 39. The distance between the Trp69 and the disulfide bond is within 8Å as disclosed in the instant specification on page 33, lines 8-10 and unclear limitation of "the plane of the disulfide bridge" as stated in 35 USC 112, second paragraph above, the method of Prombers et al. meets the limitation of Claims 40-41. Because the limitation of "over-represented" or "under-represented" "at least by 1 fold" is unclear as stated in 35 USC 112, second paragraph above, the method of Prombers et al. meets the limitation of Claim 42. The Trp69 of Prombers et al. does not make any covalent binding to any moleclue as shown in Figure 2 on page 414, which meets the limitation of "a free aromatic amino acid" in Claim 43. The cutinase of Prombers et al. was placed in a fixed space (e.g., spatially controlled) inside the cuvette and supported on the bottom of the cuvette, the method of Prombers et al. meets the limitation of

Claims 44-47 reciting "wherein said coupling is an immobilization on said support" by broad and reasonable interpretation of said immobilization, "capable of binding a thiol group" (including but not limited to capable of covalent biding), "comprises a thol group" in said support (which includes a thol making contact to the cuvette), or a "spacer" comprises a chain of compounds with the purpose of providing a link between a protein and a carrier or raising an immobilized protein above the surface of a support (by the applicants' definition) which is met by the water or buffer in between the protein and the wall of cuvette because the binding is not limited to the covalent binding between a protein and said support in claims 45-48. The cutinase of Prombers et al. is in a buffer and when the cutinase moves away from the wall of cuvette thereby released from the carrier (i.e., wall of cuvette) during the irradiation of 295 nm and forms a thol group in the cutinase, wherein the method of Prombers et al. involves disruption of the disulfide bond; thus, meeting the limitation of Claim 49. The cuvette of Prombers et al. meet the limitation of well in Claims 91 and 92.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander D. Kim whose telephone number is (571) 272-5266. The examiner can normally be reached on 11AM-7:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kathleen Kerr Bragdon can be reached on (571) 272-0931. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alexander Kim
31 January 2008

RICHARD HUTSON, PH.D.
PRIMARY EXAMINER